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ABSTRACT

A detailed description is provided of the variable general staff background (GSB), which is part of the analysis in phase I of the Evaluation of Practices in Individualized Schooling. The variable is defined, the questionnaires on which the variable is based are listed; the procedures used to scale the variable are explained; the distribution of the variable in the 156 individually guided education (IGE) schools which participated in phase I is described; and the internal consistency of the variable is reported. (Author/MH)

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Technical Report No. 478

PROCEDURES USED IN PHASE I OF THE IGE EVALUATION TO SCALE THE VARIABLE GENERAL STAFF BACKGROUND

by Gary G. Price, Terence C. Janicki, Judith A. Howard, Deborah M. Stewart, Anne E. Buchanan, and Thomas A. Romberg

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Wisconsin Research and Development Center for Individualized Schooling

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Report from the Project on
Evaluation of Practices in Individualized Schooling

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The University of Wisconsin
Madison, Wisconsin

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Abstract

This report provides a specific discussion of a variable that is part of the analysis in Phase I of the Evaluation of Practices in Individualized Schooling. The name of the variable is General Staff Background (GSB). Included in this discussion is a verbal definition of the variable, a list of the questionnaire items on which the variable is based, a technical explanation of the procedures used to scale the variable, a description of the distribution of the variable in the 156 schools that participated in the Phase I study, and the internal consistency of the variable. Most readers would find it useful to read Technical Report No. 475, Overview of School and Unit Variables and their Structural Relations in Phase I of the IGE Evaluation, before beginning this one.

This Technical Report provides a detailed description of the variable, General Staff Background (GSB). The description includes a verbal definition of the variable, a list of the questionnaire items on which the variable was based, and a technical explanation of the procedures used to scale the variable. The report also contains a description of the distribution and the internal consistency of the variable. This variable, among others, is part of the analysis in Phase I of the Evaluation of Practices in Individualized Schooling. Phase I, which is a study of 156 Individually Guided Education (IGE) schools, is the large sample part of the overall evaluation effort. Further explanation of the Phase I study and an explanation of the relationship of this variable to the Phase I analysis is given in Technical Report No. 475, Overview of School and Unit Variables and their Structural Relations in Phase I of the IGE Evaluation.

Verbal Definition of the Variable

General Staff Background (GSB) is a measure of teaching experience within IGE, teaching experience in general, and leadership activities in the profession.

Explanation of Variable-naming Conventions

This measure, like most of the variables used in Phase I of the IGE evaluation, is a composite of items taken from several different instruments. The names and identification numbers of the respective instruments are given in Table 1, along with other information. The instruments numbered 11, 17, 51, 52, and 53 were given to all staff members[1] of each school studied, and were to be filled out individually. One copy of Instruments 22, 25, and 26 was given to each of the I&R units[2] studied (two I&R units from each school, one that included second grade students and one that included fifth grade students). These instruments were filled out by the unit as a group, after they reached consensus. Instru-ments 23 and 24 were given to teachers of the I&R units studied and they filled them out individually. One copy of Instruments 16 and 21 was given to the IIC of each school, and was filled out by the IIC as a group. Instrument 13, a questionnaire about the entire school, was filled out by the principal of the school.

In order to keep track of information collected from different sources, it was necessary to develop some complex conventions for naming variables. Those conventions are explained here. The abbreviated name of each item and each variable contains eight or fewer

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[1] Includes all professional personnel (i.e., not aides) assigned at least one-third time to the building in both the 1976-7 and 1977-8 school years.

[2] Includes all professional personnel (i.e., not aides) assigned at least one-third time to the I&R unit in both the 1976-7 and 1977-8 school years and directly involved in planning instruction for the unit students in reading, math, or language arts.

Table 1

Instrument Identification

Test booklet	Instrument	Instrument number	File	Respondent
General staff questionnaire	IGE implementation survey	11	H	School staff members
	Staff background	17	H	School staff members
	Assumptions regarding conditions of schooling	51	H	School staff members
	Job satisfaction survey	52	H	School staff members
	Assumptions regarding learning and knowledge	53	H	School staff members
Unit staff questionnaire	I&R structure and function	22	A,B	Unit as a group
	Record keeping and regrouping	25	A,B	Unit as a group
	Instructional time and objectives	26	A,B	Unit as a group
	Role of staff teacher	23	F,G	All unit teachers
	Instructional practices	24	F,G	All unit teachers
IIC questionnaire	IIC structure and function	21	C	IIC as a group
	Demographic background	16	C	IIC as a group
IGE schools questionnaire	IGE schools questionnaire	13	C	Principal

characters, in order to be readable by computer. The first character of each item and variable name is a letter that indicates the case for whom the item or variable is a measure. In this discussion, variables include information from two or more questionnaire items or transformed information from one item. Items coming from a common source (i.e., the same respondents) were collected into a common data file whose name corresponds to the first letter in the names of all items collected in it. There were six such files. Those files, described in terms of the cases to which they pertain and in terms of their respective alphabetic codes, are:

A I&R units containing 2nd grade students (the I&R unit as a case).

B I&R units containing 5th grade students (the I&R unit as a case).

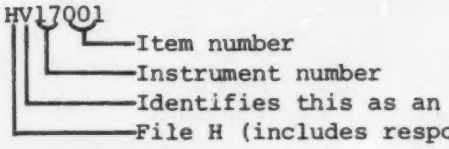
C The entire school as a case.

F Individual teachers of I&R units containing 2nd grade students.

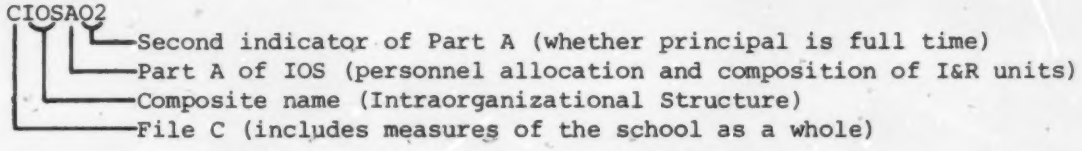
G Individual teachers of I&R units containing 5th grade students.

H Individual staff members employed by the school.

Item names. The second character in all item names is the letter "V," which distinguishes item names from names of other variables. The third and fourth characters in item names denote the number of the instrument of which the item is a part (see Table 1). The fifth, sixth, and seventh, and in some cases, eighth characters in item names contain the identification number of the item within the instrument. For example, Item number 1 from the Staff Background Questionnaire (Instrument 17), which was given to all members of the school staff, is named as follows:



Variable names. Variable names, like item names, begin with an alphabetic code that indicates the cases to which they pertain. Following that first character is an abbreviation of two to four characters used by the evaluation staff to denote the major composite of which the variable is a constituent. Subsequent characters identify the position of the variable in the scaling operation, as diagrammed in Figure 1. For example, one of the constituents of the Intraorganizational Structure composite (IOS) is named as follows:


CIOSA02
Second indicator of Part A (whether principal is full time)
Part A of IOS (personnel allocation and composition of I&R units)
Composite name (Intraorganizational Structure)
File C (includes measures of the school as a whole)

Some of the composites are measures of the school as a whole, whereas others are specific to both the I&R unit (2nd or 5th grade) and the subject area (math or reading). Composites that pertain to the school as a whole are: Interorganizational Relations (IOR), Procedures Fostering Coordination and Improvement of the School Program (GOSB), General Staff Background (GSB), Intraorganizational Structure (IOS), Belief in Individual Differences (INDIV), View of Learning: Constructivism vs. Behaviorism (CVSB), the School's Demographic Setting (DB), General Implementation of the Instructional Programming Model (GOSA), and Teacher Job Satisfaction (JOBSAT).

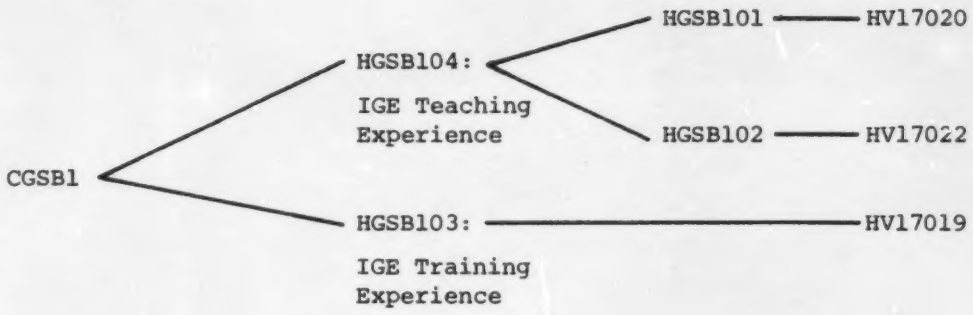


Figure 1. GSB1

Composites that are specific to I&R unit and subject area are: Utilization of Curriculum Resources (UCR), Information Acquisition (IA), Individualization of Instructional Decisions (IDM), Management of Grouping and of Instructional Continuity (IE), Allocated Learning Time (ALT), and measures of student achievement. In the technical explanations of scaling, composites specific to the 2nd grade I&R unit begin with the letter "A"; composites specific to the 5th grade I&R unit begin with the letter "B." For brevity, a lower case "z" is used as the first letter wherever the explanation of scaling applies to both the 2nd and 5th grade I&R units.

Scaling Procedure

GSB, General Staff Background, is a composite of two distinct constituents. One, measured by HGSB104, includes experience in IGE teaching, while the second, measured by HGSB103, includes experience in providing IGE training. Figure 1 (see page 6) shows the scaling operations for GSB. Figure 1 is a schematic representation of the scaling procedures; it does not portray the actual numerical operations. Appendix A includes the items used to measure GSB, and Appendix B contains the Statistical Packages for the Social Sciences (SPSS) commands used to construct the variable from the data file.

IGE teaching experience (HGSB104). HGSB104 is composed of responses by general staff to HV17020 and HV17022. These items assess the number of years the respondent has taught or worked in an administrative capacity, and how many of those years have been in an IGE school, respectively. HV17020 is rescaled so that responses of seven or more years of teaching

experience is assigned a value of two. Responses of zero (zero to two years) and one (three to six years) remain intact. The added value of teaching experience beyond seven years was thought to be negligible in comparison to the effects of years of experience early in one's career. The responses to HV17022, years of IGE experience, are recoded as follows: one to two years is assigned a value of one, three to four years is given a two, and five or more years is given a three. Again, the additional value of more than five years of IGE experience is thought to be negligible. HV17020 is transformed to HGSB101, HV17022 is transformed to HGSB102, and the two are added equally to yield HGSB104. HGSB104 is then rescaled so that from zero to two years of teaching experience, or no IGE experience yields a value of zero on HGSB104. Zero to two years of teaching experience, and one to two years of IGE experience yield an HGSB104 score of one. The maximum of seven or more years of teaching, and one or two years of IGE experience yields an HGSB104 score of five.

General staff background (GSB1). GSB1 is the simple sum of HGSB103, IGE training experience and HGSB104, with the qualification that a score of one on HGSB104 (zero to two years of teaching, and one to two years of IGE experience) yields a score of one on GSB1. In other words, providing IGE training does not add to a value of one on HGSB104. Finally, GSB1 is regressed on six items thought to assess general staff background in a less important manner. The items include: HV17010, college degrees; HV17011, present enrollment in a degree program; HV17012, membership in professional organizations; HV17014, offices held in professional organizations; HV17021, years of experience in the relevant

district; and HV17023, years of experience in the relevant school. The regression procedure locates the linear combination of these six items. This yields a maximum correlation with HGSB1B. The regression was run, and based on the results, HV17021, HV17023, and HV17010 were added to HGSB1B as specified in Appendix B.

Distribution and Internal Consistencies of the Scaled Composite

Summary statistics of the 156 schools in the Phase I Evaluation for General Staff Background (GSB) are: mean = 3.8444; SD = .618; median = 3.896; actual minimum = 1.884; logical minimum = 0; actual maximum = 5.021; and logical maximum = 7.0. A histogram for GSB is included in Figure 2. The internal consistencies (Cronbach's α) are included in Table 2.

Table 2

Internal Consistencies for the GSB and Its Constituents

	Variable	α
Composite:	General Staff Background (GSB)	.26305
Constituents:	HGSB104	.65645
	HGSB103	--[a]

[a] This is a one-item constituent; therefore, the internal consistency cannot be calculated.

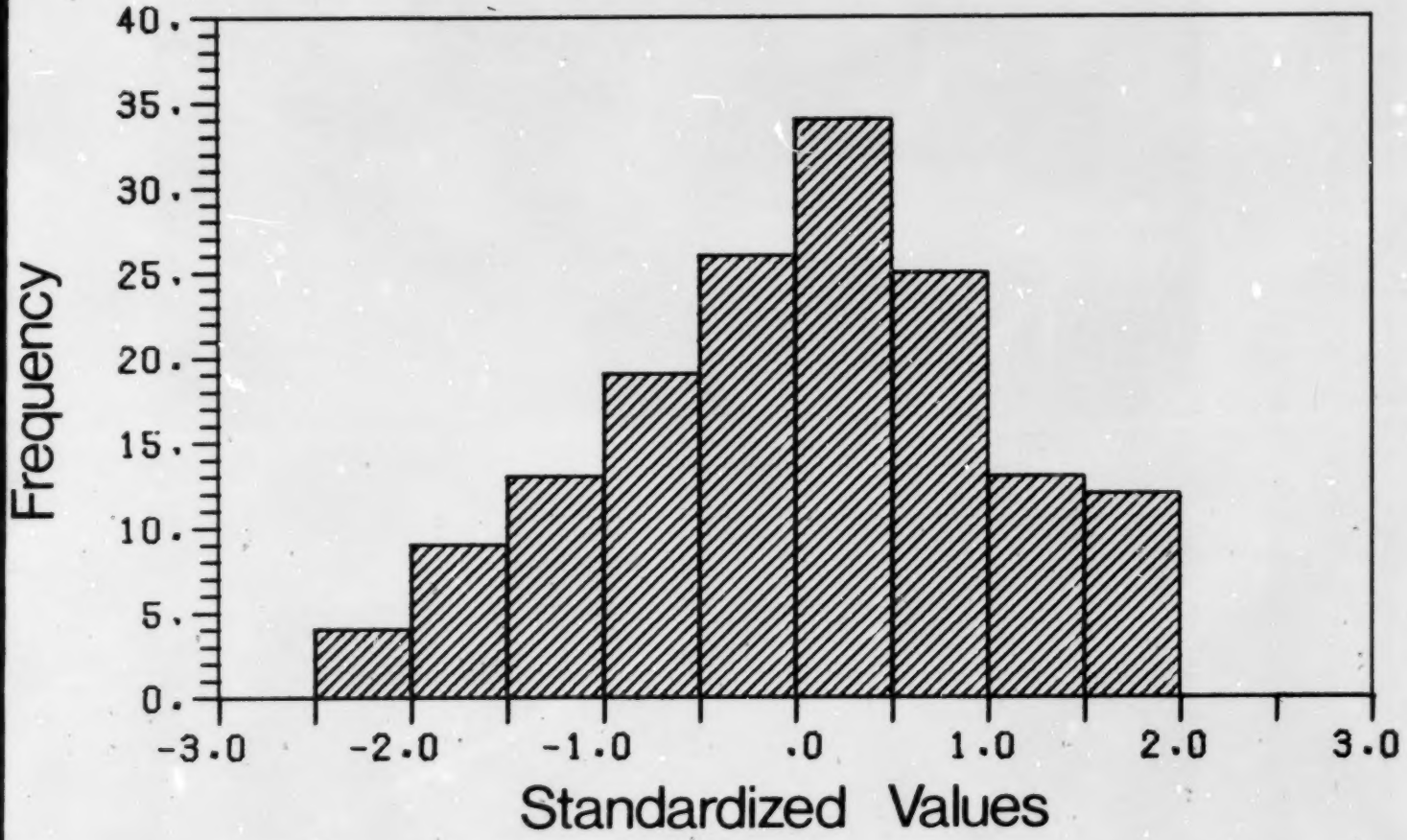


Figure 2. General Staff Background.

The relation of internal consistency to reliability in general and to validity can be difficult to understand. A composite whose constituents have high internal consistency may or may not possess high test-retest reliability. Conversely, a composite that has high test-retest reliability may have low internal consistency. Any composite that measures a homogeneous construct should rightfully be expected to have high internal consistency, but a composite that measures a construct which combines several facets which are empirically unrelated should not necessarily have high internal consistency, as noted by Cronbach and Meehl (1955)[3]. Several of the composites used in Phase I fit the latter description, and, accordingly, should not be expected to have high internal consistency.

---

[3]Cronbach, L. J., & Meehl, P. E. Construct validity in psychological tests. Psychological Bulletin, 1955, 52, 281-302.

Appendix A: Item Pool Selected

File H: General Staff as Case

HV17010
HV17011
HV17012
HV17014
HV17019
HV17020
HV17021
HV17022
HV17023

File H: General Staff as Case

HV17010 10 What is the highest level of professional preparation you have completed?

(0) Bachelors degree
(1) Bachelors degree + 16 credits
(2) Masters degree
(3) Masters degree + 16 credits
(4) Masters degree + 32 credits
(5) Doctoral degree

HV17011 11 Are you presently enrolled in a degree program?

(0) No
(1) Yes

HV17012 12 To how many professional organizations do you belong?

(0) 0
(1) 1
(2) 2
(3) 3
(4) 4
(5) 5
(6) 6
(7) 7
(8) 8
(9) 9 or more

HV17014 14 How many offices do you hold or have you held in the past 5 years in professional organizations?

(0) 0
(1) 1
(2) 2
(3) 3
(4) 4
(5) 5
(6) 6
(7) 7
(8) 8
(9) 9 or more

HV17019 19 Have you provided instruction at a workshop or other training to implement IGE?

(0) No
(1) Yes = 2

HV17020 20 How many years have you taught and/or worked in an administrative/other (e.g., pupil personnel services) capacity?

(0) 0-2
(1) 3-6
(2) 7-10
(3) 11-15
(4) 16-20
(5) 21-25
(6) 26-30
(7) 31-35
(8) 36-40
(9) Over 40

= 2

HV17021 21 How many of these years of experience have been in this district?

(0) 0-2
(1) 3-6
(2) 7-10
(3) 11-15
(4) 16-20
(5) 21-25
(6) 26-30
(7) Over 30

HV17022 22 How many of these years of experience have been in an IGE school?

(0) 0 = 0
(1) 1
(2) 2 = 1
(3) 3
(4) 4 = 2
(5) 5
(6) 6 = 3
(7) 7
(8) 8
(9) 9 or more

HV17023 23 How many of these years of experience have been in this school?

(0) 0-2
(1) 3-6
(2) 7-10
(3) 11-15
(4) 16-20
(5) 21-25
(6) Over 25

Appendix B: SPSS Commands for GSB

Operations to do in HGENERAL

```
COMPUTE          HGSB101 = HV17020
COMPUTE          HGSB102 = HV17022
COMPUTE          HGSB103 = HV17019

RECODE           HGSB101 (2 THRU 9 = 2)
RECODE           HGSB102 (1, 2 = 1) (3, 4 = 2) (5 THRU 9 = 3)
RECODE           HGSB103 (1 = 2)

COMPUTE          HGSB104 = HGSB101 + HGSB102

IF               (0 EQ HGSB101 OR HGSB102) HGSB104 = 0
IF               (0 EQ HGSB101 AND 1 EQ HGSB102) HGSB104 = 1
IF               (HGSB101 EQ 2 AND HGSB102 EQ 1) HGSB104 = 2
COMPUTE          HGSB1 = HGSB103 + HGSB104
IF               (HGSB104 EQ 1)  HGSB1 = 1

REGRESSION       HGSB1 WITH HV17010, HV17011, HV17012, HV17014,
                 HV17021, HV17023  (1)

COMMENT          This Regression of HGSB1 with HV17010 TO
                 HV17023 takes care of a problem that was not
                 discussed in the memo of 4/18/78 on GSB.
                 THIS COMMENT SHOULD UPDATE THAT MEMO.

COMMENT          GSB is not yet completed but after this
                 regression is completed an aggregate will be
                 put in files AUNIT2 and BUNIT5 and further
                 regression will take place with variables in
                 those files.

COMPUTE          HGSB1B = (1 - .28423) *HGSB1 +
                          .28423 * (.4287847 *  HV17021 +
                          .3118602 * HV17023 + .2537523 *
                          HV17010 + 2.298177)

ASSIGN MISSING   HGSB101 TO HGSB1B (-99)
```

Operations to do in CSCHOOL

```
ADD VARIABLES    CGSB1B

COMMENT          CGSB1B IS THE MEAN SCORES ON HGSB1B

ASSIGN MISSING   CGSB1B(-99)

VALUE LABEL      CGSB1B (0) min.  (7) max.
```

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